

Second 50 companies—
New breakdowns for chemicals
Page 21

Chemical &
Engineering

NEWS

A1250-1

5/12/82



0511179C092 9 W AR6019SL 1
CONGRESSIONAL INFO SERV
4520 EAST HWY SUITE 800
BETHESDA MD 20814

Deregulation

Amid the turmoil,
there's definite change
Page 13

4 Letters

Concentrates

- 18 Business
- 32 Government
- 42 Science/Technology

The Departments

- 36 New Products
- 57 Meetings
- 68 Newsprints

News of the Week

- **Exxon, Canadian consortium** halt their synthetic fuels projects. **Page 10**
- **Conoco merger was profitable** for Du Pont, stockholders learn. **Page 11**
- **Allied, Emerson Electric** to make motors from amorphous metal alloys. **Page 11**
- **Second Annual Report on Carcinogens** from Health & Human Services Department lists 88 substances. **Page 11**
- **U.S./Canada talks on acid rain** held up by U.S. insistence that all scientific work be subjected to peer review. **Page 12**
- **Union Carbide is withdrawing** as contractor for Department of Energy's nuclear facilities in Tennessee and Kentucky. **Page 12**

News Focus

- **Regulatory reform** is changing the way federal agencies operate, though not everyone agrees it is an improvement. **Page 13**

Business

- **Chemical producers in C&EN's Second 50** list increased sales 11% over 1980, a better showing than the Top 50. **Page 21**

International

- **International Register of Potentially Toxic Chemicals** will issue data profiles on 330 substances compiled to date. **Page 25**

- **U.S. chemical spending overseas** is slated to increase 27% over 1981 figure, Commerce Department survey shows; Canada will get the largest share. **Page 27**

Science Policy

- **Council of Scientific Society Presidents**, despite indifference from the elite organizations in the science community, is making impressive progress. **Page 43**

Education

- **Center for History of Chemistry**, sponsored by ACS and University of Pennsylvania, aims to give public better appreciation of chemistry's significance. **Page 46**

Technology

- **Photosynthetic bacterium** removes sulfurous gases and carbon dioxide from industrial gas streams. **Page 49**

Books

- **"Kennedy, Khrushchev, and the Test Ban,"** by Glenn Seaborg and Benjamin Loeb, recounts events leading up to signing the 1963 treaty banning nuclear tests. **Page 51**

ACS News

- **ACS Board** approves 89 Petroleum Research Fund grants-in-aid, approves increase in PRF budget. **Page 53**

Medium-sized chemical firms post fair year

Second 50 recorded sales in 1981 up 11% to nearly \$20 billion, about even with chemical inflation of 10.7%; profits increased just 3%

William J. Storck
C&EN, New York

Granted that very few companies in the chemical industry did well in 1981, the medium-sized chemical producers that make up C&EN's list of the Second 50 chemical makers in the U.S. (those ranking 51 to 100 in terms of chemical sales) at least had a sales performance that kept pace with inflation. And they outperformed the 50 largest U.S. chemical producers by far (C&EN, May 3, page 14).

Combined sales for the Second 50

totaled \$19.9 billion in 1981, an 11% increase over these same companies' sales in 1980. Since chemical inflation in 1981 averaged about 10.7%, this means that actual shipments of the Second 50 companies were about even with those in 1980.

Operating profits, for the smaller companies that disclose such figures and for which comparable year-to-year amounts can be obtained, increased just 3% to \$1.74 billion last year.

Investment in chemical activity continued to improve, in spite of relatively poor performance in earnings. Identifiable chemical assets at the companies that broke out such numbers increased 9% in 1981 to \$12.1 billion.

As a result of both sales and assets increasing faster than earnings, profitability in 1981 fell from 1980. Operating profit margins (operating profits as a percentage of chemical sales) dropped to 10.7% in 1981 from 12.1% in 1980. Return on assets (op-

erating profit as a percentage of identifiable assets) for the group dropped to an average of 14.0% last year from 14.7% in 1980.

The group of companies making up the Second 50 this year has changed slightly from last year. Not included this year are Texasgulf, which was acquired by France's Elf Aquitaine and no longer discloses operational figures, and Northwest Industries, which has changed its methods of reporting so that chemical sales figures are not available.

Two new companies are on the list. Beatrice Foods' chemical sales were large enough to warrant inclusion in past years, but the company inadvertently was omitted. And Tyler has changed its method of accounting so that chemical sales figures are available; they had not been in past years.

Other companies have chemical sales large enough to qualify them for ranking, but, like Texasgulf and Northwest Industries, they do not

Second 50 companies outperform the Top 50

About the only two respects in which the Second 50 chemical producers are the same as the Top 50 is that 50 companies are in both groups and that all of them make and sell chemicals. But the similarities end there.

Even superficially, the differences in the makeup of the two tabulations are quite evident. Of the 50 smaller chemical producers, 23 can be classified as chemical companies, compared with 26 of the Top 50 companies (C&EN, May 3, page 9).

Oil producers and natural gas companies account for only eight of the companies on the list of smaller producers, whereas 14 of the Top 50 are oil and natural gas producers. And of the Second 50, a full 19 can be classified as diversified manufacturers or manufacturers of principal product lines other than chemicals; only 10 of the Top 50 fall into this classification. Seven of the Second 50 companies are foreign-owned, compared with just four of the Top 50.

It is performance, however, where the Second 50 shines. Perhaps this is because the companies making up the list

produce more high-value-added specialty chemicals, or perhaps it is because their product lines are less diverse and thus they can adapt to changes in the economy with greater speed. Whatever the reason, while the giants of the industry were racking up a 7% increase in sales last year, sales for the Second 50 were growing 11%. And while operating profits at the Top 50 were falling 9% in 1981 from the year before, operating profits at the Second 50 were increasing 3%.

The identifiable chemical assets for both groups increased about equally in 1981—9% for the Second 50 and 8%

for the Top 50 chemical producers. Assets and operating profit growth do not include all of the companies in the list, but only those for which comparable data can be obtained.

The smaller producers in general also were more profitable than the larger chemical makers. Operating profit margin (operating profits as a percentage of sales) for chemicals for the Second 50 was 10.7%, compared with 7.7% for the Top 50. And average return on assets (operating profits as a percentage of identifiable assets) for the Second 50 was 14.0%, whereas that for the Top 50 was just 9.7%.

	Second 50	Top 50	Combined 100
Chemical sales, change from 1980	11%	7%	8%
Chemical operating profits, change from 1980	3	-9	-7
Chemical assets, change from 1980	9	8	8
Chemical operating profit margin 1981	10.7	7.7	8.1
Return on identifiable chemical assets 1981	14.0	9.7	10.2
Number of companies on list			
Chemical companies	23	26	49
Petroleum and natural gas producers	8	14	22
Diversified and other	19	10	29
Foreign owned	7	4	11

Chemical sales totaled almost \$20 billion at Second 50 chemical producers

Rank 1981	Rank 1980 ^a	Company	Chemical sales 1981 (\$ millions)	Change from 1980	Chemical sales as % of total sales	Industry classification	Chemical operating profits ^b	Change from 1980	Chemical operating profits as % of total operating profits	Operating profit margin ^c	Identifi- fiable chemical assets	Chemical assets % of total assets	Operating return on chemical assets ^d
51	54	Akzona	\$694	20.9%	58.4%	Basic chemicals	\$ 25	def	46.3%	3.6%	\$432	51.7%	5.8%
52	52	Koppers	678 ^e	17.5	33.6	Diversified chemicals	29	-38.3%	20.4	4.3	377	28.4	7.7
53	53	Merck	664 ^e	15.5	22.7	Drugs	73	25.9	12.6	11.0	547	16.5	13.3
54	51	Pennwalt	641	7.7	60.7	Basic chemicals	73	43.1	60.3	11.4	436	68.3	16.7
55	64	El Paso	576	22.6	14.7	Natural gas	13	-61.8	3.0	2.3	425	11.5	3.1
56	61	Unroyal	573	17.4	25.4	Tires	79	-23.3	50.6	13.8	415	28.5	19.0
57	55	NL Industries	565	2.4	22.9	Petroleum services	77	40.0	15.3	13.6	358	15.6	21.5
58	65	Badische	563	24.3	100.0	Basic chemicals	25	13.6	100.0	4.4	410	100.0	6.1
59	62	Esmark ^f	561 ^e	15.4	17.9	Food	47	nc	24.4	8.4	354	20.3	13.3
60	56	Freeport-McMoRan	554	5.1	66.3	Agricultural chemicals	148	9.6	62.2	26.7	313	21.1	47.3
61	57	Aluminum Co. of America	553 ^e	5.7	11.0	Nonferrous metals	na	na	na	na	na	na	na
62	59	Kerr-McGee	543	8.4	14.2	Petroleum	35	-5.4	7.2	6.4	685	20.1	5.1
63	60	Kaiser Aluminum	533	8.6	16.5	Nonferrous metals	74	39.6	26.7	13.9	481	12.5	15.4
64	65	Witco Chemical	510	12.6	39.5	Specialty chemicals	48	37.1	43.2	9.4	239	33.0	20.1
65	69	Airco	500	19.0	41.7	Basic chemicals	na	na	na	na	na	na	na
66	68	Cabot ^g	492	11.6	30.3	Specialty metals	66	nc	26.7	13.4	286	22.7	23.1
66	58	Eli Lilly	492	-5.0	17.7	Drugs	na	na	na	na	na	na	na
68	63	Standard Oil (Ohio)	481	1.1	3.5	Petroleum	34	-39.3	0.8	7.1	525	3.3	6.5
69	67	International Flavors	451	0.7	100.0	Specialty chemicals	102	-3.8	100.0	22.6	375	87.0	27.2
70	73	National Starch	450	25.3	67.4	Specialty chemicals	na	na	na	na	na	na	na
71	71	Beatrice Foods	446	14.7	4.9	Food	63	26.0	9.3	14.1	na	na	na
72	70	Pfizer	421	1.2	13.0	Drugs	-4	def	def	def	446	12.2	def
73	75	Mississippi Chemical ^h	395	14.8	100.0	Farm cooperative	61	24.5	100.0	15.4	303	71.8	20.1
74	83	Polysar	395	45.8	100.0	Basic chemicals	12	100.0	100.0	3.0	180	100.0	6.7
75	72	Internorth	368	2.2	10.1	Natural gas	49	-29.0	11.6	13.3	407	10.7	12.0
76	77	American Petrofina	335	5.7	13.4	Petroleum	8	-57.9	6.4	2.4	248	21.6	3.2
77	78	Liquid Air	327	4.8	80.1	Basic chemicals	46	4.5	90.2	14.1	378	78.1	12.2
78	79	GAF	325	5.5	48.3	Diversified chemicals	57	9.6	def	17.5	201	35.9	28.4
79	76	Upjohn	324	-0.6	17.1	Drugs	4	-85.7	1.5	1.2	194	10.0	2.1
80	84	Terra Chemicals	317 ^e	19.6	100.0	Agricultural chemicals	na	na	na	na	na	na	na
80	81	Thiokol	317	11.2	44.0	Aerospace	31	-3.1	50.0	9.8	291	62.2	10.7
82	92	First Mississippi ^h	308	39.4	86.0	Agricultural chemicals	44	25.7	73.3	14.3	163	51.1	27.0
83	86	Rhône-Poulenc	300	17.6	100.0	Specialty chemicals	na	na	na	na	na	na	na
84	88	Vulcan Materials	299	19.1	38.2	Nonmetallic minerals	71	42.0	52.6	23.7	236	35.0	30.1
85	87	H. B. Fuller ⁱ	280	11.1	85.1	Specialty chemicals	na	na	na	na	na	na	na
86	85	Martin Marietta	277	7.4	13.6	Aerospace	48	-3.1	23.1	11.8	212	22.9	12.6
86	—	Tyler	277	na	35.9	Diversified chemicals	26	na	32.9	9.4	163	36.1	16.0
88	82	Emhart	270	-3.9	15.5	Machinery	27	12.5	16.4	14.0	111	10.4	24.3
89	94	Big Three Industries	265	28.6	32.2	Petroleum services	79	27.4	39.1	29.8	505	49.8	15.6
90	89	SCM ^h	263 ^e	6.5	13.6	Paint	31	-3.1	23.1	11.8	247	22.9	12.6
91	90	Petrolite ^j	261	12.0	87.9	Specialty chemicals	41	5.1	89.1	15.7	158	79.8	25.9
92	74	Soltex	250	-28.6	100.0	Basic chemicals	na	na	na	na	na	na	na
93	92	Houston Natural Gas ^j	248	21.4	1.6	Natural gas	14	-26.3	0.6	6.9	368	16.7	7.3
94	90	Cities Service	240	3.0	2.8	Petroleum	5	-68.8	0.8	2.1	340	5.6	1.5
95	96	Engelhard	240 ^e	21.8	10.9	Specialty metals	47	30.6	44.8	19.6	203	28.8	23.2
96	80	Baker Industries	235	-20.3	100.0	Agricultural chemicals	na	na	na	na	na	na	na
97	95	Loctite ^h	214	7.4	100.0	Specialty chemicals	24	-33.3	100.0	11.2	195	107.7	12.3
98	50	Stepan Chemical	205	29.7	100.0	Specialty chemicals	13	116.7	100.0	6.3	186	100.0	7.4
99	48	Getty Oil	204	21.4	1.6	Petroleum	14	-26.3	0.6	6.9	na	na	na
100	49	Agway	200	21.2	9.7	Farm cooperative	na	na	na	na	na	na	na

a Revised. b Operating profit is defined as sales less administrative expenses and cost of selling. c Operating profit as a percentage of chemical sales. d Operating profit as a percentage of identifiable chemical assets. e Chemical sales include significant amounts of nonchemical products. f Fiscal year ended Oct. 31, 1981. g Fiscal year ended Sept. 30, 1981. h Fiscal year ended June 30, 1981. i Fiscal year ended Nov. 30, 1981. j Fiscal year ended July 31, 1981. na = not available. nc = no change. def = deficit.

break out these figures. Among these companies are 3M, Dart & Kraft, Gulf & Western, General Tire, and St. Joe Minerals.

Many of the companies on the list outperformed the averages by a wide margin. The largest sales increase was posted by the U.S. operations of Canada's Polysar, whose chemical sales increased 45.8% from 1980 to \$395 million. Polysar's increase took it to 73rd on the list from 83rd in 1980. First Mississippi, whose sales increased 39.4% to \$308 million, also advanced 10 places to 82nd in 1981 from 92nd place the year before.

Other companies with healthy sales gains include Stepan Chemical with a 29.7% gain; Big Three Industries, 28.6%; and Unilever's U.S. subsidiary National Starch, 25.3%.

In operating profit gains, Stepan Chemical was the leader, increasing almost 117% to \$13 million. And Polysar doubled its chemical operating profits to \$12 million from the year before.

A clutch of companies had increases in operating profits of about 40%. Pennwalt's operating profits increased 43.1% to \$73 million, Vulcan Materials' 42.0% to \$71 million, NL Industries' 40.0% to \$77 million, Kaiser Aluminum's 39.6% to \$74 million, and Witco's 37.1% to \$48 million.

Like the Top 50, there are different bases for reporting business segment data among the chemical companies on the Second 50 listing. Therefore, the data in the accompanying table should be viewed as approximate and the rankings taken only as a rough indication of the relative place in the chemical industry of any individual company. □

The U.S. chemical industry in 1981

U.S. chemical industry sales in 1981 kept up with inflation, but that is about all. Sales of all chemicals last year totaled about \$142 billion, up 9% from the \$132 billion sold by all sources the year before.

The companies selling these chemicals include not only those of C&EN's lists of Top 50 and Second 50 producers, but many other companies as well. These include companies that are too small to make the lists, and companies that do not disclose their chemical sales. This latter group includes many foreign-owned firms and some U.S. companies.

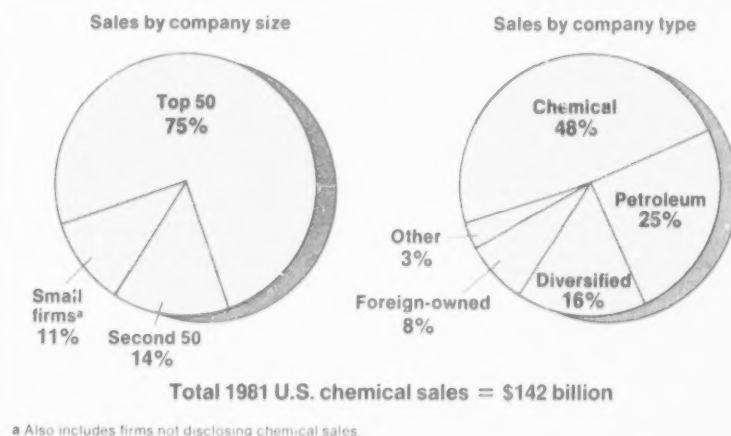
Of last year's chemical sales, the Top 50 chemical producers contributed \$107 billion, or 75%. Sales by the Second 50 chemical producers totaled about \$20 billion, or 14% of the total. The remaining \$15 billion in sales came from

small producers and chemical makers who do not disclose chemical data.

By company type, 48% of the sales came from chemical companies, 25% from petroleum and natural gas producers, 16% from other diversified companies, 8% from the U.S. operations of foreign firms, and the remaining 3% from firms that did not disclose chemical sales.

It is interesting to note that although diversified firms account for only 16% of the total chemical sales, they make up 29% of the firms on C&EN's two lists of producers, indicating that their chemical operations are rather small in comparison to other producers.

Meanwhile, the Commerce Department lists shipments of chemicals and allied products in 1981 at \$182 billion. This, however, contains some products not included in C&EN's listing.



Leaders among the Second 50 in profit, assets, and profitability

Rank	Operating profit (\$ millions)	Operating profit margin ^a	Chemical assets (\$ millions)	Return on chemical assets ^b
1	Freeport-McMoRan \$148	Big Three Industries 29.8%	Kerr-McGee \$685	Freeport-McMoRan 47.3%
2	International Flavors 102	Freeport-McMoRan 26.7	Merck 547	Vulcan Materials 30.1
3	Uniroyal 79	Vulcan Materials 23.7	Standard Oil (Ohio) 525	GAF 28.4
4	Big Three Industries 79	International Flavors 22.6	Big Three 505	International Flavors 27.2
5	NL Industries 77	Engelhard 19.6	Kaiser Aluminum 481	First Mississippi 27.0
6	Kaiser Aluminum 74	GAF 17.5	Pfizer 446	Petrolite 25.9
7	Merck 73	Petrolite 15.7	Pennwalt 436	Emhart 24.3
8	Pennwalt 73	Mississippi Chemical 15.4	Akzona 432	Engelhard 23.2
9	Cabot 66	First Mississippi 14.3	El Paso 425	Cabot 23.1
10	Beatrice Foods 63	Liquid Air 14.1	Uniroyal 415	NL Industries 21.5
11	Mississippi Chemical 61	Beatrice Foods 14.1	Badische 410	Witco Chemical 20.1
12	GAF 57	Emhart 14.0	Internorth 407	Uniroyal 19.0
13	Internorth 49	Kaiser Aluminum 13.9	Koppers 377	Pennwalt 16.7
14	Witco Chemical 48	Uniroyal 13.8	International Flavors 375	Tyler 16.0
15	Martin Marietta 48	NL Industries 13.6	NL Industries 358	Kaiser Aluminum 15.4

^a Chemical operating profit as a percentage of chemical sales. ^b Chemical operating profit as a percentage of identifiable chemical assets.

Health, and the Environmental Chemicals Data & Information Network (ECDIN) of the Commission of the European Communities. Huismans' aim is to expand the number of such network partners even further.

Not surprisingly, IRPTC also maintains network ties with other bodies of the UN system, such as the Economic Commission for Europe, the Food & Agriculture Organization, the International Agency for Research on Cancer, the International Atomic Energy Agency, the International Labor Organization, and the World Health Organization. And close links have been established with the International Program on Chemical Safety formed two years ago by ILO, UNEP, and WHO.

A third source of information is the chemical industry itself as well as universities. "We see the industry as an excellent data source, provided we can sort out with them the data that are available," Huismans comments. "The chemical industry has an enormous store of undisclosed information of great value to us. Some of it is proprietary because it involves new product research. Some may reflect unfavorably on chemical safety. And much of it is unpublished because the chemicals have not shown adverse effects. Such data on safe use conditions of chemicals equally are of interest to IRPTC.

"We deal with producers on a company-by-company basis because their attitudes toward us differ. We work strictly on the understanding that we will not compromise on acceptability of data or tolerate any interference concerning what information goes into our data base. This doesn't mean that we expect companies to give us highly sensitive information such as manufacturing processes. But if we accept their data for our files, we expect the information to include everything that relates to health and environmental safety."

He admits to an attitude of distrust, sometimes even of hostility, toward the IRPTC concept on the part of industry in general, although he is quick to add that some companies do provide data on an ad hoc basis "if we ask the questions." But there are those in industry who question the need for IRPTC, noting that they, as producers of food additives, pesticides, or whatever, are in a much better position to advise on environmental effects, and, indeed, already have direct links with various government agencies on the safety of their products.

Responding to such an argument, Huismans points out that data in the register are compiled on the basis of strict scientific objectivity. Those who consult it can be confident that they are getting unbiased information. "We are geared to people in government or to those advising governments on chemical safety issues, as well as to all others with responsibility for chemical hazard control."

The 330 products in the register's initial list of chemicals span the alphabet from the 1,2-dihydro-5-nitro derivative of acenaphthylene, a dye intermediate and fungicide, to Ziram, a herbicide. Each entry carries an identifying Chemical Abstracts Service Registry number, or RTECS registry number, or both. Rather than merely providing bibliographic references, the register furnishes hard data—factual, numerical, and non-numerical information, together with their sources.

Each entry will be updated frequently. Meanwhile, a further 100 or so chemicals will be added each year to the existing list.

All inputs are fed to a data bank at the UN's International Computing Center in Geneva. Ultimately, it will be possible for people to access the data bank and obtain a direct readout on computer terminals. Or the listings can be supplied on microfiche.

Currently, however, the information is going out as hard copy, since many who have use for it, especially if they are in less-developed countries, possess neither computer facilities nor microfiche equipment. The manual in its present form numbers at least 600 pages. □

U.S. chemical spending abroad to rise 27 %

It would take brave managements to face stockholders and tout big new plant spending plans at annual meetings dotting the current calendar. After all, the surrounding business scene is clearly in recession, and plant use is the lowest in many years. But big new spending plans for chemical plants are definitely on corporate minds—in certain favored spots outside the U.S.

These foreign plant buildups are not just in the well-known regions with cheap raw material natural gas such as western Canada, Mexico, the Middle East, and Indonesia. They include some countries in Western Europe, Africa, and South America.

Exactly where is revealed in a mass



For environmental standards, make one call—Analabs

Check your requirements against the Analabs complete line of reference standards for food, soil, water and air pollutants.

Choose from PCB's, pure PCB isomers, PBB's, Haloethers, Nitrosamines, Heterocyclic Carcinogens, Polynuclear Aromatics, Chloroaromatics, or Pesticides. Packed individually in kits or in solution as mixtures for environmental monitoring of priority pollutants in accordance with EPA and OSHA guidelines. Custom syntheses available for any chemical for the environmental researcher.

For prompt service, or for information about methodologies and tools for sampling to meet EPA and OSHA requirements, contact us. Call or write for our free Environmental Standards and Accessories Catalog. **Analabs**, A Unit of Foxboro Analytical, 80 Republic Drive, North Haven, CT 06473 (203) 288-8463.

Another dimension in analytical measurement and control

FOXBORO

CIRCLE 12 ON READER SERVICE CARD

May 10, 1982 C&EN 27

International

of new data from the Commerce Department on foreign capital spending for various industries, including chemicals and allied products. After giving out overall foreign spending figures by industry a month ago, Commerce now goes into detail on the target countries.

Even the initial data were enough to raise eyebrows. For the chemical industry, Commerce found in a survey made last December that capital spending by majority-owned foreign affiliates of U.S. companies is expected to rise 27% in 1982 to \$3.98 billion.

Such an increase is not at all in line with the state of plant and equipment funding showing up in other surveys, including C&EN's. Most other recent polls on the subject show a soggy investment outlook. For example, C&EN found that capital spending by leading basic chemical companies is planned to increase just 6% worldwide and 8% in the U.S. in 1982 (C&EN, Dec. 14, 1981, page 13). That's about in line with current construction inflation. In other words, project levels are flat.

Indeed, the Commerce survey

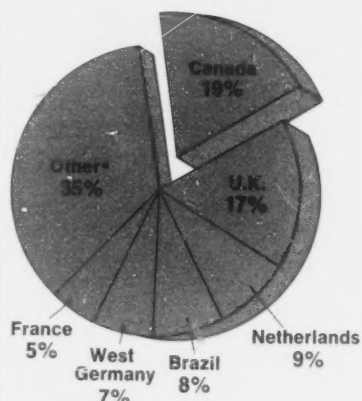
shows that only one other industry, metals, plans a steeper gain in foreign capital spending in 1982 than does the chemical group. Even the oil industry, in an exploration binge, lags behind the chemical pace.

Why? Well, Commerce doesn't say. But one major difference between its survey and others is that it covers not just basic chemical companies but related firms in drugs, paints, cosmetics, and other areas. Also, Commerce's restricting the survey to foreign affiliates may introduce a skewing from the niceties of financing in the U.S. and abroad.

And in any case, these Commerce surveys have a history of overoptimism. For example, in the semiannual surveys for 1981 foreign chemical spending, Commerce first found last June that chemical and related companies planned a 19% increase from 1980. By December, the increase was scaled down all the way to 5%.

Recessionary reality can do the same thing this year too, although there are signs that business recovery is under way in foreign economies. The Conference Board, based in New York City, finds in its latest series of

Canada gets biggest share of chemical foreign capital



1982 total = \$3.98 billion

* Principal other countries are Spain 5%, Belgium 4%, Mexico 4%, Australia 3%, and Italy 3%.

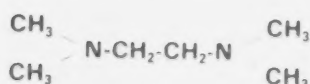
Source: Department of Commerce

leading indicators for seven industrialized countries that recovery has started in the U.K., France, and Japan. The West German index is level, and weakness continues in Italy, Canada, and, of course, the U.S.

Possibly with such new economic

PRODUCT PROSPECTUS

TMEDA



TETRAMETHYL ETHYLENE DIAMINE

- for metal complexes
- for quaternary synthesis
- excellent catalyst for rigid PUR foam
- in other resin technology

GRADES: 100% anhydrous
65% aqueous

high quality: very competitive
in bulk or in drums

Now AVAILABLE from

Buckman Laboratories, Inc.
Intermediates Division

1256 N. McLean Blvd.
Memphis, TN 38108
Phone (901) 278-0330

CIRCLE 43 ON READER SERVICE CARD

NEW OPTICAL SENSOR



The Kontes Bantam-meter[®] Sensor is an off-the-shelf, low-cost, easy to install unit designed to fit 1" square or round tubes.

Suitable for detection of:

- Solid Objects
- Liquid Levels
- Liquid Droplets
- Submerged Objects
- Bubble Films
- Turbidity Limits
- Density Changes
- Flowmeter Floats

Small Size — 64 mm x 60 mm x 12 mm

High Sensitivity — down to 0.015"

Remote operation — up to 500'

Line Voltage Switching — up to

10 VA at 200 VDC

Internal Regulation — 9-14 VDC

input at 150mA

Internal Latch — traps transient events

Send for more information today.

KONTES

Vineland, NJ 08360 (609) 692-8500

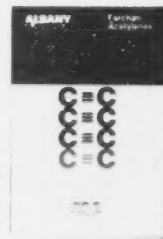
CIRCLE 17 ON READER SERVICE CARD

Your DEPENDABLE source for SODIUM AMIDE

(SODAMIDE)

This free-flowing powder is available in commercial quantities, and is widely used in the manufacture of...

- Antihistamines
- Tranquilizers
- Pharmaceuticals
- Perfume Intermediates
- Fine Chemicals
- General Organic Synthesis



Write for a copy of our NEW 72-page Farman catalog listing over 300 specialty acetylenic chemicals. The catalog also contains a complete listing of available pheromones. Farman Labs, 4702 East 355th Street, Willoughby OH 44094 • 216/946-6435.

ALBANY
INTERNATIONAL
Chemicals Division

CIRCLE 1 ON READER SERVICE CARD

International

expansion in mind, chemical and related companies are ticketing the biggest block of increased spending to such industrialized countries. Commerce finds that 79% of non-U.S. spending by these firms is heading for industrialized regions (53% to Western Europe) and just 21% to the developing world. Further, spending in the industrialized sector is due to rise 30%, whereas spending in developing areas is planned to rise just 19%.

A finer focus on the Commerce statistics shows an even choppy pattern in chemical spending plans. In both industrialized and developing worlds, only a few countries are slated for really large investment gains. Many others will idle or drop.

For example, in Western Europe, Commerce shows chemical spending gains going overwhelmingly to just three countries—two of them at the top of the list. Running away with number one spot is the U.K., with chemical spending due up 44% to \$664 million. Second with an even larger 87% increase is the Netherlands, where 1982 spending is planned at \$365 million. The only country in the world with more new chemical investment coming from the U.S. is Canada, where the western buildup is fueling a 19% jump this year to \$775 million.

The third major investment target in Europe is Spain, where chemical spending is planned to increase 90% this year to \$190 million. Other major percentage gains are 52% in Greece to \$32 million and 40% in Sweden to \$21 million.

Elsewhere in the industrialized sphere, two investment changes stand out. Chemical spending in Japan is forecast to fall 11% to \$80 million. By contrast, investment in Australia is heading up 37% to \$126 million.

In the developing world, a lopsided chemical investment slate throws two thirds of the total to just three countries. By far the largest is Brazil, with a 31% planned increase this year to \$330 million. Next is booming Mexico, with a 16% chemical spending gain to \$156 million. Third is Argentina, but here changed political conditions are driving planned chemical investment down 20% this year to \$76 million.

Note that not one of these developing countries is in the Organization of Petroleum Exporting Countries. Commerce thoughtfully provides a separate total for OPEC countries. Perhaps surprisingly, chemical spending in OPEC is predicted to rise a relatively mild 11% in 1982 to \$89 million. □

PRODUCT PROSPECTUS

NEW! AA STANDARDS IN ORGANIC SOLVENTS

Now you can order AA standards in organic solvents from the same source you've come to rely on for AA standards in aqueous solvents. Alfa. If you need to measure the amount of metal in oil or other water incompatible systems, try our broad line of AA standards in organic solvents.

Each standard contains 1000 ppm of metal. These versatile products can also be used as organometallic standards in analytical studies.

Send today for further information.

Alfa

Thiokol/Ventron Division
Alfa Products

152 Andover Street
Danvers, Massachusetts 01923
(617) 777-1970, Telex: 94-0378 ALFA DARS
CIRCLE 2 ON READER SERVICE CARD

Uracil

PCR is pleased to announce a 30% increase in our capacity to meet your needs for high purity URACIL.

In addition, to simplify your quality control and assure batch to batch consistency, we now offer both technical and pure grades in lots of up to one metric ton.

For our recent technical bulletin on URACIL and its applications—or any other information—please write or call...

PCR, INCORPORATED
P.O. Box 1466
Gainesville, Florida 32602
Phone (904) 376-8246



ORGANIC CHEMICALS DIVISION, SCM CORPORATION
CIRCLE 28 ON READER SERVICE CARD

New, simpler LC clean-up technique

Rheodyne's Technical Note 2 tells how to clean up samples using a new technique that's faster and costs less than conventional purification methods—such as liquid/liquid partition, column chromatography or commercial separation cartridges.

Complex samples can be injected directly into the chromatographic system, where clean up takes place.

**Send for
Tech. Note #2.**

Rheodyne, Inc.,
P.O. Box 996,
Cotati, Calif. 94928,
U.S.A. Phone
(707) 664-9050



RHEODYNE

THE LC CONNECTION COMPANY
CIRCLE 33 ON READER SERVICE CARD

14 Si New Organosilicon Compounds Register & Review, Edition S-5 provides data on over 1000 products

Structures, physical properties and available toxicity data on more than 800 organosilanes, over 200 silicones including inert fluids, functional prepolymers, catalysts, resins and gums. Seven chapters review topics in organosilicon chemistry as well. Request your free copy of Edition S-5 today.



PETRARCH SYSTEMS, INC.
Bartram Road • Bristol, PA 19007
215-781-9255 • In the Far East:
Chisso Corp. Tokyo • 03-284-8506

33A

CIRCLE 31 ON READER SERVICE CARD